where flush deck door openings are desired, must not be less than 6 inches nor more than 12 inches from the door frame so that an unstiffened diaphragm of bulkhead plating 6 to 12 inches wide is provided completely around the door frame. Where such limits cannot be maintained, alternative installations will be considered by the Marine Safety Center. In determining the scantlings of these bulkhead stiffeners, the door frame should not be considered as contributing to the strength of the bulkhead. Provision must also be made to adequately support the thrust bearings and other equipment that may be mounted on the bulkhead or deck.

(2) Sliding watertight door frames must be either bolted or welded watertight to the bulkhead.

(i) If bolted, a suitable thin heat and fire resistant gasket or suitable compound must be used between the bulkhead and the frame for watertightness. The bulkhead plating must be worked to a plane surface in way of the frame when mounting.

(ii) If welded, caution must be exercised in the welding process so that the door frame is not distorted.

(e) For each watertight door which is in a required subdivision bulkhead, an indicator light must be installed in the pilothouse and at each other vessel operating station from which the door is not visible. The indicator must show whether the door is open or closed.

[CGD 79–023, 48 FR 51010, Nov. 4, 1983, as amended by CGD 88–032, 56 FR 35828, July 29, 1991; CGD 85–080, 61 FR 944, Jan. 10, 1996; USCG–2000–7790, 65 FR 58464, Sept. 29, 2000]

§ 170.275 Special requirements for cargo space watertight doors.

(a) A door between cargo spaces—

(1) Must not be designed for remote operation;

(2) Must be located as high as practicable; and

(3) Must be located as far inboard of the side shell as practicable but in no case closer to the side shell than one-fifth of the beam of the vessel where the beam is measured at right angles to the centerline of the vessel at the level of the deepest load line.

(b) If the door is accessible while the ship is in operation, it must have installed a lock or other device that prevents unauthorized opening.

(c) Before installing a watertight door in a cargo space, approval must be obtained from the Commanding Officer, Marine Safety Center.

[CGD 79–023, 48 FR 51010, Nov. 4, 1983, as amended by CGD 88–070, 53 FR 34537, Sept. 7, 1988]

Subpart I—Free Surface

§ 170.285 Free surface correction for intact stability calculations.

(a) When doing the intact stability calculations required by this subchapter, the virtual increase in the vessel's vertical center of gravity due to liquids in tanks must be determined by calculating—

(1) For each type of consumable liquid, the maximum free surface effect of at least one transverse pair of wing tanks or a single centerline tank; and

(2) The maximum free surface effect of each partially filled tank containing non-consumable liquids.

(b) For the purpose of paragraph (a)(1) of this section, the tank or combination of tanks selected must be those having the greatest free surface effect.

§ 170.290 Free surface correction for damage stability calculations.

(a) When doing the damage stability calculations required by this subchapter, the virtual increase in the vessel's vertical center of gravity due to liquids in tanks must be determined by calculating—

(1) For each type of consumable liquid, the free surface effect of at least one transverse pair of wing tanks or a single centerline tank; and

(2) The free surface effect of each partially filled tank containing other than consumable liquids.

(b) For the purpose of paragraph (a)(1) of this section, the tank or combination of tanks selected must be those having the greatest free surface effect.

(c) When doing the calculations in paragraph (a) of this section, the free surface effect of a liquid in a tank must be determined by—

(1) Assuming the vessel is heeled five degrees from the vertical; or